

REMARKS

By the above amendment, the title of the invention has been amended to be more clearly indicative of the claimed invention, the specification has been amended to utilize the same number for shots as described in the paragraph at page 16, and additionally, claim 1 has been amended to further recite the feature that a total energy of the irradiating polarized UV light per unit area is at least 25 times larger than the power of the irradiating polarized UV light, which feature will be described below.

In accordance with the present invention, in order to effect appropriate orientation of the orientation film by irradiation with polarized UV light, both the power of the irradiating polarized UV light and the total energy of the irradiating polarized UV light are important factors. That is, if the power of the irradiating polarized UV light is too large, the orientation film is subject to breakage. On the other hand, if the total energy of the irradiating polarized UV light per unit area is not sufficient, the orientation film is not properly oriented by irradiating polarized UV light. Thus, in order to obtain proper orientation of the orientation film by irradiating polarized UV light, both the power and total energy must be appropriately set with the setting power of the irradiating polarized UV light being lower than a predetermined value and the total energy of the irradiating polarized UV light per unit area being sufficient based upon the power to effect proper orientation of the orientation film. In accordance with the present invention, as described at page 16, lines 4 and 5 of the specification, "The irradiation energy at this time was such that 76 shots of rays were emitted at 5 mJ/cm²". Thus, it is apparent that the total energy is represented by the number of shots emitted at the selected power. In such case, it is apparent that the total energy is 76 times larger than the power of irradiating polarized UV light 5 mJ/cm². Similarly, at page 19, lines 4-6 of the specification, there is described "25-shot emission with the irradiation energy set at 5 mJ/cm²" which is representative of the total energy being 25 times larger than the power of the irradiating polarized UV

light. Accordingly, it is apparent that the feature as now recited in claim 1 is supported by the specification of this application, in that two examples have been given wherein the total energy is at least 25 times larger than the power of the irradiating polarized UV light.

As to the rejection of claims 1-6 and 10-14 under 35 U.S.C. §103(a) as being unpatentable over Kouno et al (U.S. 5,818,560); the rejection of claims 7 and 15 under 35 U.S.C. §103(a) as being unpatentable over Kouno et al (U.S. 5,818,560) in further view of Tanaka (U.S. 5,893,990) and Kusumoto et al (U.S. 6,027,960); and the rejection of claims 8, 9, 16 and 17 under 35 U.S.C. §103(a) as being unpatentable over Kouno et al (U.S. 5,818,560) in further view of Gibbons et al (U.S. 6,061,138), such rejections are traversed insofar as they are applicable to the present claims, and reconsideration and withdrawal of the rejections are respectfully requested.

As to the requirements to support a rejection under 35 U.S.C. 103, reference is made to the decision of In re Fine, 5 USPQ 2d 1596 (Fed. Cir. 1988), wherein the court pointed out that the PTO has the burden under §103 to establish a prima facie case of obviousness and can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. As noted by the court, whether a particular combination might be "obvious to try" is not a legitimate test of patentability and obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. As further noted by the court, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

Furthermore, such requirements have been clarified in the recent decision of In re Lee, 61 USPQ 2d 1430 (Fed. Cir. 2002) wherein the court in reversing an obviousness rejection indicated that deficiencies of the cited references cannot be

remedied with conclusions about what is "basic knowledge" or "common knowledge".

The court pointed out:

The Examiner's conclusory statements that "the demonstration mode is just a programmable feature which can be used in many different device[s] for providing automatic introduction by adding the proper programming software" and that "another motivation would be that the automatic demonstration mode is user friendly and it functions as a tutorial" do not adequately address the issue of motivation to combine. This factual question of motivation is immaterial to patentability, and could not be resolved on subjected belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher."... Thus, the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion. (emphasis added)

In setting forth the rejection based upon Kouno et al, the Examiner indicates that in col. 2, lines 55-62 and 62-65, Kouno et al discloses that the energy density is preferably 1 to 90 mJ/cm². It is noted however, at col. 2, lines 63 and 64, Kouno et al specifically provides that the energy density is "more preferably 30 to 70 mJ/cm²". Thus, applicants submit that even though the Examiner contends that it would have been obvious to one of ordinary in the art at the time of the invention to make the power of the irradiating light less than mJ/cm² because Kouno et al discloses an overlapping range, applicants submit that the specific teaching of Kouno et al is to provide power in the range of 30 to 70 mJ/cm²" which is outside of the recited power of "less than 10 mJ/cm²" as set forth in claim 1 and therewith the dependent claims. Accordingly, applicants submit that the Examiner has engaged in the principal of "obvious to try" which is not the standard of 35 U.S.C. §103. See In re Fine, supra. In any event, applicants submit that assuming arguendo that Kouno et al provides a disclosure of the power as claimed, Kouno et al provides no disclosure of the total energy as recited in claim 1 and therewith the dependent claims, such that

applicants submit that claim 1, as amended, patentably distinguishes over Kouno et al in the sense of 35 U.S.C. §103 and should be considered allowable thereover.

Applicants note that Kouno et al discloses in col. 14, lines 48-50, that when a laser beam of 30 μm in spot diameter is applied at a frequency of 50 Hz, for example, it is possible to scan the alignment layers 136 to 139 at a speed of 1.5 mm/sec. Since 50 Hz represents 50 times per second, assuming that the moving length per one shot is calculated by $(1.5 \text{ mm/sec})/(50/\text{sec})$, a value of 30 μm is obtained so that it is apparent that one area is irradiated at only one time. In a similar manner, col. 15, lines 47-50 of Kouno et al, apparently describes an arrangement in which possibly an area is irradiated twice, although the wavelength of the light used does not represent UV light. In any event, applicants submit that Kouno et al, irrespective of the disclosure thereof, does not provide a disclosure or teaching of the recited feature of claim 1, as amended, that a power of the irradiating polarized UV light is a value less than 10 mJ/cm², and a total energy of the irradiating polarized UV light per unit area is at least 25 times larger than the power of the irradiating polarized UV light, such that claim 1 and the dependent claims patentably distinguish over Kouno et al, such that all claims should be considered allowable thereover.

With respect to dependent claims 10 and 11, for example, claim 10 recites the feature that the irradiating of the polarized UV light is effected in a number of shots of the polarized UV light, the number being less than 100, and wherein the number is a two digit number. As is apparent, the number of shots utilized serves for controlling the total energy so as to provide a total energy of at least 25 times larger than the power as recited. Although the Examiner contends that it would have been obvious to one of ordinary skill in the art at the time of invention to irradiate the alignment layer with 10 to 100 shots because optimization of result effect variable has been judicially held to be obvious to those of ordinary skill in the art, applicants submit that the Examiner's position is contrary to the decision of In re Lee, supra, for example,

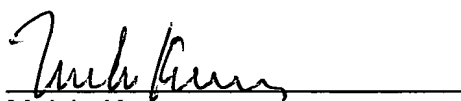
and has no basis in fact. Thus, applicants submit that irrespective of the Examiner's position concerning Kouno et al, this patent fails to disclose or teach the claimed features as recited in claim 1 and the dependent claims in the sense of 35 U.S.C. §103 and all claims should be considered allowable thereover.

With respect to the other cited art of Tanaka, Kusumoto et al and Gibbons et al, applicants submit that the Examiner has engaged in a hindsight reconstruction attempt of the present invention, which secondary references fail to overcome the deficiencies of Kouno et al, such that irrespective of the position set forth by the Examiner, the proposed combination fails to provide the claimed features as set forth in claim 1 and therewith the dependent claims in the sense of 35 U.S.C. §103, such that all claims should now be considered allowable.

In view of the above amendments and remarks, applicants submit that all claims present in this application patentably distinguish over the cited art, and should now be in condition for allowance. Accordingly, issuance of an action of a favorable nature is courteously solicited.

To the extent necessary, applicant's petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 01-2135 (501.36702CC3) and please credit any excess fees to such deposit account.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Melvin Kraus', is written over a horizontal line.

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